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Nota di contenuto	Ronald A. DeVore and Angela Kunoth, Prologue to Multiscale, Nonlinear and Adaptive Approximation II -- Ronald A. DeVore and Angela Kunoth, Introduction: Wolfgang Dahmen's mathematical work (as of 2009) -- Markus Bachmayr and Albert Cohen, Multilevel Representations of Random Fields and Sparse Approximations of Solutions to Random PDEs -- Hassan Ballout and Yvon Maday and Christophe Prud'homme, Nonlinear compressive reduced basis approximation for multi-parameter elliptic problem -- Ido Ben Shaul and Shai Dekel, Sparse Besov Space Analysis of Representations in Machine Learning -- Benjamin Berkels and Peter Binev, Joint Denoising and Line Distortion Correction for Raster-Scanned Image Series -- Dietrich Braess and Wolfgang Hackbusch, The Approximation of Cauchy-Stieltjes and Laplace-Stieltjes Functions -- Andrea Bonito and Diane Guignard, Approximating Partial Differential Equations without Boundary Conditions -- Albert Cohen and Ronald DeVore and Eitan

Tadmor, Constructions of Bounded Solutions of $\operatorname{div} u = f$ in Critical Spaces -- Jan-Christopher Cohrs and Benjamin Berkels, On the importance of the ϵ -regularization of the distribution-dependent Mumford–Shah model for hyperspectral image segmentation -- Ronald DeVore, Guergana Petrova and Przemyslaw Wojtaszczyk, A Note on Best n -term Approximation for Generalized Wiener Classes -- Lars Grasedyck, Sebastian Krämer and Dieter Moser, Stable Truncation and Root-Independent Normalization of Tree Tensor Networks -- Diane Guignard and Olga Mula, Tree-Based Nonlinear Reduced Modeling -- Helmut Harbrecht and Michael Multerer, Samplets: Wavelet Concepts for Scattered Data -- Michael Herty, Adrian Kolb, and Siegfried Müller, A novel multilevel approach for the efficient computation of random hyperbolic conservation laws -- Kamen G. Ivanov, Gerard Kerkyacharian, George Kyriazis, and Pencho Petrushev, On the Construction of Bases and Frames with Applications -- Angela Kunoth and Mathias Oster and Reinhold Schneider, Towards a Continuous Mathematical Model for the Analysis of Classes of Deep Neural Networks -- Dominique Picard, Unstoppable Mathematicians -- Reinhold Schneider and Mathias Oster, Some Thoughts on Compositional Tensor Networks -- Rob Stevenson, Efficient least squares discretizations for Unique Continuation and Cauchy problems.

Sommario/riassunto

This book presents a collection of high-quality papers in applied and numerical mathematics, as well as approximation theory, all closely related to Wolfgang Dahmen's scientific contributions. Compiled in honor of his 75th birthday, the papers are written by leading experts and cover topics including nonlinear approximation theory, numerical analysis of partial differential equations, learning theory, and electron microscopy. A unifying theme throughout the collection is the emphasis on a solid mathematical foundation, which serves as the basis for the most efficient numerical algorithms used to simulate complex phenomena.
